



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
PO Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,651	05/22/2001	Eng-Chew Cheah	9818-0052-999	1047

24341 7590 06/18/2003

Pennie & Edmonds, LLP
3300 Hillview Avenue
Palo Alto, CA 94304

EXAMINER

MITCHELL, JAMES M

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,651

Applicant(s)

CHEAH, ENG-CHEW

Examiner

James Mitchell

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 10-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election

Applicant's election of claims 1-9 in Paper filed March 10, 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Applicant's election without traverse of claims 1-9 in Paper filed March 10, 2003 is acknowledged. Claims 10-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in Paper filed March 10, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Moyle et al. (U.S 3,706,840).

Moyle (Fig 4A-4E) discloses an integrated circuit package and process comprising: inherently providing a substrate ("plate", 31; portion below depression; Column 44-46) with a center region and a peripheral region, a semiconductor die (41; Column 3, Lines 56-58) positioned on the center region of the substrate with inherent bond pads formed on the die (via wirebond), a nonconductive material ("glass") lead

finger mounting ring (31; elevated circular portion of said substrate; Column 5, Lines 12-13) positioned on a peripheral region of said substrate, inherently mounting a package lead (21) by attaching said lead to said lead finger mounting ring (Column 5, Line 40-43), a bond wire (42) with a first end portion coupled to the package lead and a second end portion coupled to the bond pad ("contact"; Column 6, Lines 20-22), forming a first encapsulant (46; Column 6, Lines 47-50) by dispensing ("liquid resin applied"; Column 6, Lines 44-45) an epoxy and curing ("heat", Column 6, Lines 50-51) over the bond wires, the semiconductor die and a portion of the lead, and an inherent mold compound (51; Column 6, Lines 63-65; Column 4, Lines 7-8), and then forming a second encapsulant over the first encapsulation by dispensing the molding compound over the lead finger mounting ring, the substrate and a portion of the lead to form the integrated circuit package; first encapsulation inherently limiting movement of the bond wire during formation of the second encapsulation (wires entrapped in a solid via encapsulant material applied over wires as a liquid and then hardened to a solid prior to second encapsulation), a die attached pad (17) disposed on the center region of the substrate and between the die and the substrate, whereby the die is inherently positioned on the die pad and comprises a plurality of said bond pads (not labeled); wherein the epoxy material is confined by the lead finger (via space between chip and ring shown in Fig 4C).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moyle as applied to claim 1.

Moyle discloses an inherent rounded first encapsulant (encapsulant is formed of multiple contiguous layers in all direction forming an inherent rounded portion) and an inherent pad pitch and wire length.

Furthermore, the rounded top would have been obvious to one of ordinary skill in the art as a matter of choice to form the first encapsulation rounded, because it has been held that the configuration of a structure would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.). In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Moyle does not appear to explicitly disclose that the pad pitch between two bond pads is under 60 micrometers, a length of at least one of the bond wires is less than 3500 micrometers, or that the diameter of at least one bond wire is under 25 micrometers.

However, it would have been obvious to form the structure of Moyle with these limitations, because it has been held that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984),

cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Response to Arguments

Applicant's arguments filed December 5, 2002 have been fully considered but they are not persuasive. Applicant contends the Moyle is different than the present invention, because its ring is formed on the lead, citing item 32. However, simply because the inventor coined item 32 as a ring does not preclude the device from having other rings, nor does the fact that it was called a ring limit its scope, since applicants can be their own lexicographer.

In Moyle as indicated in the office action filed June 6, 2002, and shown in Fig 4B, there is an aperture in the original substrate that forms a ring around the aperture, wherein the leads are formed on the top portion of that ring. Since, applicant has argued an item (number) not even relied on by the examiner in his last office action, the point is deemed moot.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Application/Control Number: 09/863,651
Art Unit: 2827


Page 6


shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3230 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


jmm
June 16, 2003


DAVID L. TALBOTT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 20